

CLAIMS

What is claimed is:

1. A current source switching circuit with reduced charge injection, comprising:

a transistor switch; and

a pulling mirror path in parallel with said transistor switch.

2. The current source switching circuit according to claim 1, further comprising:

a current source connected between a power source and a first side of said transistor switch.

3. The current source switching circuit according to claim 2, further comprising:

a load connected between a ground and a second side of said transistor switch.

4. The current source switching circuit according to claim 3,

20 wherein:

said load is a charging capacitor.

5. The current source switching circuit according to claim 1, wherein said transistor switch comprises:

a MOS transistor.

6. The current source switching circuit according to claim 1,
wherein said transistor switch comprises:

a first serial combination of a functional MOS transistor with
a first compensating transistor connected to a source of said functional
MOS transistor and a second compensating transistor connected to a
drain of said functional MOS transistor.

7. The current source switching circuit according to claim 6,
wherein said transistor switch further comprises:

a second serial combination of a complementary functional
MOS transistor with a first complementary compensating transistor
connected to a source of said complementary functional MOS transistor
and a second complementary compensating transistor connected to a
drain of said complementary functional MOS transistor.

8. The current source switching circuit according to claim 1,
wherein said pulling mirror path comprises:
a pull-down amplifier.

9. The current source switching circuit according to claim 8,
wherein:
said pull-down amplifier is configured as a voltage follower to
have an output which follows a current source side of said switch.

10. The current source switching circuit according to claim
8, further comprising:
a complementary mirror path transistor switch, said
complementary mirror path transistor switch being adapted for operation
opposite to that of said transistor switch.

11. The current source switching circuit according to claim 10, wherein said complementary mirror path transistor switch comprises:

a series combination of a functional transistor with a respective compensating transistor connected to either side of said functional transistor.

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12. The current source switching circuit according to claim 11, wherein said current source comprises:

a MOS transistor.

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13. The current source switching circuit according to claim 12, wherein said pulling mirror path comprises:

a pull-up amplifier.

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14. The current source switching circuit according to claim 13, further comprising:

a current source connected between a ground and a first side of said transistor switch.

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15. The current source switching circuit according to claim 14, further comprising:

a current sink connected between a ground and a second side of said transistor switch.

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16. The current source switching circuit according to claim 15, wherein said current sink comprises:

a MOS transistor.

5 16, wherein said current source comprises:
17. The current source switching circuit according to claim

18. A method of reducing charge injection from a current source through a current switch into a load, said method comprising:
providing a mirror path in parallel with said current switch;
turning a switch in said mirror path on when said current switch is turned off; and
10 turning said switch in said mirror path off when said current switch is turned on.

15 19. The method of reducing charge injection from a current source through a current switch into a load according to claim 18, wherein:
said current source is a MOS transistor.

20 20. The method of reducing charge injection from a current source through a current switch into a load according to claim 18, wherein:
said current source is a charged capacitor.

21. A method of switching a current source out from a load,
said method comprising:

opening a transistor switch connecting said current source to
said load; and

substantially simultaneously with said step of opening,
closing a switch to a mirror path in parallel with said transistor switch so
that current from said current source flows through said mirror path;

wherein charge injection from said current source to said
load when said transistor switch is opened is greatly reduced.

22. Apparatus for switching a current source out from a
load, comprising:

means for opening a transistor switch connecting said
current source to said load; and

means for closing a switch to a mirror path in parallel with
said transistor switch at substantially simultaneously a same time as said
means for opening opens said transistor switch so that current from said
current source flows through said mirror path;

wherein charge injection from said current source to said
load when said transistor switch is opened is greatly reduced.